

KELLY
ON
SEA BATHING.

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KELLY

ON

SEA-BATHING.

A TREATISE
ON
SEA - BATHING,

ITS USE AND ABUSE, &c.

AND THE

DISEASES RELIEVED

BY

A RESIDENCE ON THE SEA-SHORE.

BY THOMAS T. KELLY, SURGEON, &c.

AUTHOR OF

"A HISTORY OF THE POTATO PLANT, AND THE
DISEASES TO WHICH IT IS LIABLE."

&c. &c.

Λούσαι και Καθαρισθητι.

Author of the Potato Plant

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TO

THOMAS CHADWICK,

LIEUTENANT-COLONEL OF THE BENGAL ARTILLERY,

This Treatise

IS

RESPECTFULLY DEDICATED,

AS A MARK OF SINCERE REGARD AND ESTEEM,

BY

THE AUTHOR.

PREFACE.

IF the press overflowed with essays on the subject treated of in this little Manual, then would the present be uncalled for; such, however, is not the case. The directions given, and the opinions offered, by medical authors, for the general use of Sea-bathing, are for the most part contained within the columns of voluminous professional works, not within the reach of the public generally. The author, therefore, has endeavoured to condense in this little Treatise, all such matter on the subject as he considered necessary for the unprofessional reader, for whose guidance and instruction it is alone intended. The work was entered upon

at the advice of a few professional friends ; and the author's opportunities of witnessing the effects produced by Sea-bathing, during five years' residence as a medical practitioner, at Donaghadee, together with a study of most medical authors on the subject, have rendered him much facility for observation. It was his intention some time ago to present to the public a more extended treatise on "Sea-bathing," but the anxious cares of a country medical practice, and other circumstances, prevented his accomplishing the task. The following pages have been the fruits of a few leisure hours. By some it may be considered that the directions herein laid down are too diffuse; by others, that they are not sufficiently explicit. To please all might indeed be difficult, but the author hopes that the unprofessional reader may derive some practical advantage, and that those who practise bathing as a means of gratification and enjoy-

ment, may likewise receive some instruction from its perusal; and if the suggestions laid down will guide to the proper use of Sea-bathing, the author's object will be fully obtained.

Manor House,
near Worthing,
Sussex,
July 13th, 1849.

CONTENTS.

CHAPTER I.

INTRODUCTORY REMARKS.

PAGE.

Bathing, its origin briefly considered. — Singular Antipathy of the Inhabitants of these Islands against.—Want of a National support for Public Bathing places.—Superiority of our Continental Neighbours in these matters.—Simple definition of Bathing.—Division of Baths.—The Water of the Ocean.—Depth of the Sea.—Laplace's calculation and theory.—Analysis of Sea-Water.—Remarks on, &c.	1
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CHAPTER II.

GENERAL DIRECTIONS FOR BATHING.

Sea-Bathing more fully considered.—Minute division of Baths not necessary.—Temperature of Baths. —The Skin physiologically considered. — Its three Coats described.—The Skin performs very important functions.—Lavoisier and M. Sequin's singular Experiments.—The result observed.—Quantity of perspirable matter passing from the Skin.—The late Dr. Andrew Combe, quoted.—Philosophy of the Skin's action, and its relation to Health.—Frequent ablution necessary.—The	
---	--

	PAGE.
connexion of the Skin with all other parts of the body.—It absorbs as well as exhales.—Diseases often result from neglect of cleanliness.—Attention to the Skin often better than Medicine.—The active ingredients of Sea-water are absorbed by the Skin.—Its action on the Body considered.—Dr. Hufeland's, of Berlin, opinion of Sea-bathing quoted.—Specified and distinct directions for Bathing not judicious.—General advice for Sea-Bathing.—Preparation of the System before commencing to Bathe.....	9

CHAPTER III.

THE BENEFICIAL EFFECTS OF SEA-BATHING.

Variability in temperature of Climate of the British Isles.—Pulmonary Consumption a Native of Britain.—Hot and cold bathing a Cure for Colds, &c.—Scrofula, its nature explained.—More a disposition to than a real disease.—It is hereditary.—The late Mr. Carmichael's opinion.—Hot and cold Sea-Bathing, and residence on the Sea-shore, both a preventative and cure.—Directions how to bathe.—Dr. Priessnitz's mode of curing Disease by sweating and bathing.—Hot Baths not dangerous.—Persons benefited by Bathing.—Rheumatism relieved by hot and cold bathing.—Asthma relieved by residence at the Sea-shore.—Pulmonary Consumption, tepid or warm Baths in.—Sir J. Clarke.—Weakness of the Spine relieved by Bathing.—The superiority of the Vapour Bath generally considered.—It protects the System from cold.—Its use in Diseases.—The Shower Bath, &c.	28
---	----

CHAPTER IV.

CASES IN WHICH BATHING MAY BE INJURIOUS.

	PAGE.
Dr. J. Forbes' opinion of the general errors in Sea-Bathing. — Convalescent Patients are often wrongly directed to Bathing.—A general advice in recommending cold Bathing.—The Symptoms produced when Bathing disagrees.—In Organic Diseases when Bile in the Stomach, to Females at their Periods, during Pregnancy, in Plethoric Habits, and Head Affections, the cold Bathing is hazardous.—Simple Palpitation of the Heart is often relieved by Bathing.—In all Cutaneous Diseases Bathing most frequently disagrees, &c.	45

SEA - BATHING,

ITS USE AND ABUSE, &c.

CHAPTER I.

BATHING, ITS ORIGIN BRIEFLY CONSIDERED—SINGULAR ANTIPATHY OF THE INHABITANTS OF THESE ISLANDS AGAINST—WANT OF A NATIONAL SUPPORT FOR PUBLIC BATHING PLACES—SUPERIORITY OF OUR CONTINENTAL NEIGHBOURS IN THESE MATTERS—SIMPLE DEFINITION OF BATHING—DIVISION OF BATHS—THE WATER OF THE OCEAN—DEPTH OF THE SEA—LAPLACE'S CALCULATION AND THEORY—ANALYSIS OF SEA WATER, REMARKS ON, ETC.

THE practice of bathing, or ablution of the body, we must naturally infer to have commenced at the earliest era of mankind. The dictates of nature must have prompted to its use; the

Bible, the most authentic record of history, conveys to us the intelligence of frequent cleansing and purifying of the body, becoming the enlightened of their generation, and the Mosaic law enjoined it as a necessary rite; neither were the Pagan generations, amidst their confusion of practices and forms, unmindful of the necessity of the bath, as not only a means of preserving but of restoring health. Thus we find the ancient Greeks and Romans duly considering its importance, by the erecting and supporting, for the public, at their national cost, those stately edifices of grandeur and magnificence so characteristic of their times and nations.

From causes difficult to explain, it would appear that there scarcely exist a people so opposed to free and frequent immersion of their bodies as the inhabitants of these Islands, and to the reflective mind this must certainly seem the more singular, since undoubtedly no nation more justly prides itself on personal cleanliness. The fact nevertheless is beyond dispute, that there are probably among our whole population several millions who never

enjoy the pleasing and healthful influences resulting from the general bathing of the body, either in hot or cold water, and we may justly say that a sort of hydrophobia seems to hold their imagination in perfect subserviance. Our continental neighbours far surpass us in their attention to these matters. They justly consider the use of bathing as necessary for the preservation of health as well as a luxury, and it is a singular fact, that, before the late revolution, in one hospital in Paris, more baths were administered to the poor, in one year, than to the whole operative population of Britain for ten years. This has been proved by well authenticated statistics.

The philanthropic advocates of sanitary reform have lately been unwearied in their exertions to excite general sympathy in support of their praiseworthy object; and the erection of public baths and washing houses, in different large towns, betokens a lively and progressive interest to be at work in the public mind, leading to its completion. When we read of Agrippa building 160 public places for bathing, where the citizens might gratuitously enjoy advantages of ablution,

either in hot or cold water, and that Rome could pride herself in her eight hundred and fifty-six public baths, we cannot but wonder at the national antipathy that Britain, which has so far outstripped all others in her rapid strides to perfection, cannot boast herself of one similar establishment erected and maintained at the national cost.*

Although a lengthened preliminary chapter, explanatory of the origin and use of baths, the different views, both rational and visionary, entertained of them by the sages of old, together with a descriptive account of the splendid buildings of Titus, Paulus, Emilius, and Dioclesian, might argue much diligence of research, yet I have considered such superfluous for the pages of this simple treatise, which is only intended for practical utility, and shall avoid as much as possible the introduction of technical phraseology, which might confuse the unprofessional

* It is a fact, notwithstanding, that some hundreds of public baths and washing houses have lately been erected, in various parts of Britain, by individual subscriptions, but still we cannot consider these as of national origin, as they receive no direct national support.

reader, for whose instruction and guidance it is solely intended.

Bathing, in its most comprehensive signification, may thus simply be defined, the act of immersing part or whole of the body in water, or some other fluid, hot or cold, and to this fluid the term bath is generally applied.

Baths are of various kinds, natural and artificial, and may be divided into tharmal and frigid, shower and vapour, general and topical. Such division being capable of other and more minute sub-division, but our object here is simply to treat of Sea-water, in its cold and hot state, as a popular bath.

The water of the mighty ocean, which covers three-fifths of the earth's surface, and which, while constantly effecting such vast and important changes over the whole face of nature, seems to be at once the main agent in the purifying and renovating the habitable portions of this mundane orb. The average depth of the Sea has been by different authors very widely and variously estimated, and the conclusions of the most profound philosophers on this subject have been very singularly discordant.

The standard generally excepted is five miles. The famous Laplace, however, to account for the rise of the tidal wave, or the height of the tides by the laws of gravitation, infers that the average depth must not be less than ten miles. His theory of calculation is very ingenious, but the conclusion ranks at great variance from the general received opinion.

In describing the qualities of Sea-water it is scarcely necessary to state that when placed in a glass or tumbler it is colourless and transparent, having a peculiar saline nauseous taste, very characteristic of itself. Numerous analytical tables of it, by different chymists, have from time to time been furnished to the scientific world, but that of the celebrated Schevetzer seems now to be generally acknowledged as the standard. A pint of water taken from the English channel, submitted to a minute test, was found to contain the following salts,—

Chloride of Sodium, or common Salt $216\frac{1}{2}$ grs.

Muriate of Magnesia $19\frac{1}{2}$ grs.

Sulphate of Magnesia, or Epsom Salts $18\frac{1}{3}$ „

Sulphate of Lime $11\frac{1}{4}$ „

Besides these, two very important agents,

endowed with very peculiar medical virtues, in reference to the human constitution, have lately been found by more recent analysis of Sea-water, namely, Iodine and Bromine. Wallastown, in addition to these, has pointed out the presence of Muriate of Potash, or Chloride of Potassium, as it is scientifically called, in the proportion of six grains to the pint—a substance equally important although very peculiar in its qualities, leaving us as yet little knowledge of its medicinal action on the human constitution.

From this brief account it must be readily admitted that Sea-water is in fact an important *mineral water*; and we are justified in looking with much confidence for beneficial effects resulting from its employment in a medical point of view, for the use internal or external, provided it be judiciously recommended, as from the use of other Spa or Mineral waters, proportionate to, and in accordance with, their respective chemical constituents. And, indeed, we may justly conclude, that much more might be effected in the way of curing or relieving disease, by means of the application of Sea-

water to the skin; and also, by means of its judicious use internally, than has hitherto been accomplished.

CHAPTER II.

SEA-BATHING MORE FULLY CONSIDERED—MINUTE DIVISION OF BATHS NOT NECESSARY—TEMPERATURE OF BATHS—THE SKIN PHYSIOLOGICALLY CONSIDERED—ITS THREE COATS DESCRIBED—THE SKIN PERFORMS VERY IMPORTANT FUNCTIONS—LAVOISIER'S AND M. SEGUIN'S SINGULAR EXPERIMENTS—THE RESULT OBSERVED—QUANTITY OF PERSPIRABLE MATTER PASSING FROM THE SKIN—THE LATE DR. ANDREW COMBE QUOTED—PHILOSOPHY OF THE SKIN'S ACTION, AND ITS RELATION TO HEALTH—FREQUENT ABLUTION NECESSARY—THE CONNECTION OF THE SKIN WITH ALL OTHER PARTS OF THE BODY—IT ABSORBS AS WELL AS EXHALES—DISEASES OFTEN RESULT FROM NEGLECT OF CLEANLINESS—ATTENTION TO THE SKIN OFTEN BETTER THAN MEDICINE—THE ACTIVE INGREDIENTS OF SEAWATER ARE ABSORBED BY THE SKIN—ITS ACTION ON THE BODY CONSIDERED—DR. HUFELAND'S, OF BERLIN, OPINION OF SEA-BATHING QUOTED—SPECIFIED AND DISTINCT DIRECTIONS FOR BATHING NOT JUDICIOUS—GENERAL ADVICE FOR SEA-BATHING—PREPARATION OF THE SYSTEM BEFORE COMMENCING TO BATHE, ETC.

WE come now to examine more fully the qualities of Seawater, and its general use as a bath,

and it may not be out of place here to state that much of the efficacy, or benefits resulting from Sea-bathing, whether used prophylactically or as a curative agent on the human system, depends on the judicious mode of its application.

Some writers on the subject of bathing have thought it necessary to classify baths under a minute subdivision, viz, cold, cool, temperate, tepid, warm, and hot, &c.; but for all general purposes such minuteness seems altogether superfluous and unnecessary, and therefore I have considered the division of baths under three heads amply sufficient, namely, cold, tepid, and hot. The range and thermometrical temperature for these may be assumed as follows,—

The cold bath, from 32° to 75° Fahrenheit.

The tepid bath, from 75° to 98° Ditto.

The warm bath, from 98° to 120° Ditto.

The structure and physiology of the human skin is worthy of brief consideration, in endeavouring to advocate the use and importance of bathing.

In a general sense it may be described as a membrane, composed of three layers, which,

though simple in their appearance, seem destined by the great Creator of all to perform very important functions in the animal economy. Our object here is not to enter into a scientific description of anatomical arrangement, which would be unnecessary for the unprofessional reader and for this reason I will simply state that these three layers which compose the human skin may be thus described: The first, cuticle or external, scientifically called *epidermis* when cut, or otherwise abraded, is insensible of pain, and is therefore considered destitute of nervous energy, or the influences of life, and seems intended to assist in protecting the more important and delicate "true skin." The second, or middle, or mucous coat, otherwise *rete mucosum*, which is characterized by its being the seat of the colouring matter of the skin, but of such delicate structure that it can only be distinctly observed on dissection in the Negro, in whom it is singularly thick, and may be viewed as merely a thin soft covering, placed between the external and inner coats, to more fully protect the nerves and vessels of the latter by its mucous softness and

pliancy, and has been well described by the celebrated Breschat, as being the seat of the variation of beautiful colours which has been observed both in marine and terrestrial animals, amounting, in many cases, to the radiance of metallic splendour. The third is called the true skin, or *dermis* or *corion*, it is the most important of all, both in functions and structure, and may be said to constitute the principle thickness of the skin which covers the entire human surface ; it is very minutely and bountifully supplied with blood-vessels and nerves, and may indeed be regarded as composed of these alone. It includes in its functions the sense of touch, the power of inhalent or absorbent and exhalent qualities, giving to the skin that characteristic hue of life, beauty, and health, whilst its immediate connection with all the important viscera exercises powerful impressions on the whole animal economy.

During the whole existence of man, the organization of his body seems to be undergoing constant and progressive change, and thus it is said that, in the space of seven years, all the old materials of which his frame was

composed have in due course been removed, and new matter replaced; and it is justly inferred that if any impediment or obstruction be offered to the perfection of this natural process, disease is the result. The medium through which this important change is effected is the skin, the kidneys, and the bowels, but the excretion by the pores of the skin is by far the most abundant. Great diligence of research has been practised by some continental physiologists, in order to discover the exact amount of perspirable fluid passing from the surface of the body in a person in the ordinary enjoyment of health. The celebrated Lavoisier and M. Seguin have given the most satisfactory results from their rigid mode of experiments. The latter, to fully discover the amount passing from the body by the lungs and cutaneous surface, had himself shut up in a bag of glazed taffetas, which was tied over his head and provided with a hole, the edges of which were glued to his lips with a mixture of turpentine and pitch, so that the pulmonary exhalation might be thrown outwards, and cutaneous alone be retained in the bag. He

first weighed himself and the bag in a very nice balance, at the beginning of the experiment; then, at the end of it, when he had become lighter in proportion to the quantity of exhalation thrown out by the breathing; and, lastly, he weighed himself out of the bag to ascertain how much weight he had lost in all; and by subtracting the loss occasioned by the lungs, the remainder of course exhibited the amount carried off by the skin. The average amount thus observed was 18 grains a minute, of which amount 11 was from the skin, and thus he found the cutaneous perspiration in 24 hours nearly 33 ounces, passing from the surface of the body by the *insensible* perspiration, as it is called, notwithstanding the amount which is evolved, caused by great heat or exercise, and is in much greater quantity, and by accumulating on the surface becomes visible in the form of sweat.

The late Dr. Andrew Combe very beautifully describes this effort of nature, "Taking," says this popular writer, "even the lowest estimate of Lavoisier, we find the skin endowed with the important charge of removing from the

system about twenty ounces of waste matter every twenty-four hours ; and when we consider that the quantity is not only great, but sent forth in so divided a state as to be invisible to the eye, and that the whole of it indirectly given out by the very minute ramifications of the blood-vessels, which supply the secreting organs of the skin, we perceive at once why these vessels are so extremely numerous that a pin's point cannot touch any spot without piercing them. We see also an ample reason why, independently of the debilitating impression made through the medium of the nervous system, checked perspiration should prove so detrimental to health, — because, for every twenty-four hours during which such a state continues, we must either have a large amount of useless and now poisonous matter accumulating in the body, or have some of the other organs of excretion greatly over tasked to get rid of it by other means ; which obviously cannot happen without disturbing their regularity and well-being. People know the fact, and wonder that it should be so, that cold applied to the skin when the body is inactive, or continued

exposure in a cold day, often produces a bowel complaint, a severe cold in the chest, or inflammation of some internal organ: but were they taught, as they ought to be, the structure and uses of their own bodies, they would rather wonder that it did not always produce one of these effects."

When we thus physiologically consider the importance of the exhalant function performed by the skin, the immense quantity of fluid passing off in an invisible vapour, conveying with it various saline particles and animal matter no longer necessary for the healthy action of the human frame, we cannot but see the importance there is for the frequent ablution of the body.

The intimate and beautiful relationship that exists between the skin and all the other important internal organs, naturally point out the necessity that there is for due preservation of its healthy functions. That the skin is endowed with active powers of absorption as well as that of exhalation is clearly evident, and thus if the perspirable matter secreted be allowed to remain on the surface from neglect of cleanliness, we must naturally infer that the absorbent action

is excited by the stimulus of its poisonous ingredients and the residual parts are returned to the internal circulatory fluids, and acting on the system as a poison of greater or less power, produce fever, inflammation, and numerous other diseases to which man is thus liable. Many no doubt neglect this and enjoy health, but far more might be found who suffer from the omission of frequent cleansing of the surface of the body. If due observance was paid to the proximate causes of many diseases, and if as much attention was paid to the healthy action of the skin, by cleansing and frequent ablution of the body, as there is to the almost general practise of dosing the system by internal medicines, for the relief of biliary and stomachic derangements, we would assuredly be freed from many of the torments to which human nature is subject.

If there be such necessity for the frequent cleansing of the surface of the body as I have just stated, and if it produces such healthful influences on the system, we may naturally infer that great benefits must arise from the judicious use of the water of the ocean—a fluid so boun-

tifully impregnated with so many medicinal ingredients. Some of the most active of which penetrate into the body, through the pores of the skin, and by combining with the internal circulating fluids, alter their existing condition. This is a truth beyond the power of dispute, which may be simply illustrated by the fact that most persons after sea-bathing have experienced a slight saline taste, accompanied with a peculiar bitterness, although not a drop of water entered the lips during the operation of bathing. If sea-water be thus mechanically absorbed, we may naturally infer that a fluid charged with so many distinct and powerful agents, must, when introduced into the system, produce corresponding influences on the secretions and excretions of the body.

Dr. Hufeland, of Berlin, the most famous continental physician of his time, in speaking of sea-bathing, maintains that the beneficial effects of sea-water, when applied to the surface of the human body, are by no means to be ascribed to the chymical ingredients alone, since the sea, says this famous writer, "is the habitation of innumerable organic beings, who

live and die there, it becomes impregnated with a quantity of subtile and volatile animal particles, of which chymistry knows nothing, but which extraordinarily increase the stimulating power of sea water. The smell of the sea already manifests their presence, and the whole of the neighbouring atmosphere receives from it a peculiar quality, which is exhibited in the characteristic appearance of organic nature in marine districts; in the strength and freshness of their inhabitants; in the peculiarities of the diseases of the latter, and finally, in the healing power of the sea breezes over certain complaints, especially of the lungs; nay, modern experiments, especially of the excellent Hermbstädt, have shown that even the muriatic acid of sea-water is volatilized and mingles with the air; so that we may with justice affirm, that on the sea-coast not only the water but the air is salt, and acts as an especial stimulus on the frame. These volatile particles,—the life which the Sea maintains outwardly as well as inwardly, the perpetual agitation of the water and shock of the waves, with the electric and magnetic currents, produced by that shock,—lastly, the modification of

the atmosphere around a sea station, these form a whole, in which we may well seek for the reason of those surprising advantages which are sometimes derived from Sea-bathing." Sea-water, then, we may justly say, when applied to the surface of the body, particularly in a warm state and recently taken from the Sea, and aided by the peculiar atmosphere which belongs to its immediate vicinity, produces two direct effects on the human frame; the one external by counter-irritation; the other internal by its salutary influences on the circulatory system. Thus, we have in our possession, a therapeutic agent of powerful influence, requiring only a judicious application either for the removal or the alleviation of a numerous class of diseases.

Nevertheless, while the beneficial effects of Sea-bathing cannot, for one moment, be doubted, there exist certain peculiarities of constitution and conditions of the system, which not only render immersion in sea-water inefficacious, but even injurious, and, if persevered in, highly dangerous.

To those in good health, and who bathe merely as a source of gratification, and as a

measure of hygiene, anything beyond a few general observations are unnecessary. There are, however, a large class of persons by whom immersion is used as a therapeutic agent, exercising on them very beneficial or injurious effects. To these the exercise of a judicious discrimination, both as to the propriety of indulging or abstaining from its use, as well as a proper observance in relation to the time and the kind of bath most likely to prove beneficial, is matter of very important consideration.

Our limits will not admit of a general reference to individual cases or peculiarities of system, in which the practice of bathing may in some be advantageously used, while in others it produces opposite effects. Indeed, authoritatively to lay down particular directions for sea-bathing, and thus endeavour to establish certain canons on matters ever varying, would be no less presumptuous than empirical. Thus the convalescent who has lately been removed from the dense and vitiated atmosphere of the crowded city, to the pure, bracing, and invigorating breezes of the sea-shore, only requires to breathe its healthful and renovating air, in order to

be restored to his wonted health and vigour; while the use of the sea-bath often, in such a debilitated state of the system would undoubtedly result in dangerous consequences. Yet the judicious use of the tepid or hot bath, will most likely have very beneficial effects, in restoring a healthy action on the cutaneous surface, and, by equalizing the circulatory fluids restore the due performance of internal functions. Again, the languid and enervated patient, may be quickly restored to strength and energy of body, by plunging into the waves of the briny ocean. Much depends, also, on some preparation of the system, before using either the hot or cold bath, as also the mode of living during its employment. A person of sound health and strength may indeed bathe in the sea at any time, except immediately after meals, when it would in all probability disturb the digestive process, and thereby produce dangerous consequences. Valetudinarians would be acting contrary to experience in using the cold bath, unless when the system has been invigorated by the nutritious qualities of a temperate meal. Thus they ought to avoid in general the

practice of bathing in the sea before breakfast, as great lassitude and nervous debility is apt to follow so uncautious a practice. To these, therefore, we would say, that the proper time to use cold sea-bathing is about two or three hours after breakfast, or, if more convenient, three hours after dinner, provided this meal be early. The length of time proper to remain in the water ought not to be longer than from three to ten minutes. Some nervous systems are so delicate that they ought not to continue more than a minute or so, otherwise the power of reaction will be greatly weakened, and the healthful influence of the bath destroyed. There are others again who can continue in it a considerable time and keep up this practice daily, without any hurtful consequences becoming apparent; but, even by these, certain general rules ought not to be allowed to pass unheeded, for there are innumerable instances where very serious consequences have resulted from so hazardous a practice. Several cases of extreme debility, produced by such injudicious indulgence, have come under our own notice in Donaghadee, especially in females, in

whom the nervous weakness produced could only be relieved by a long course of soothing and tonic remedies. Many, even of robust constitutions, have often complained to me of sea-bathing disagreeing with them, but on enquiry it was clearly evident that they had abused its remedial qualities by its improper use. It would, therefore, be generally judicious, even in the most healthy, to commence with two or three tepid baths before using cold sea-bathing, beginning with a temperature, say, of 98°, and reducing each six or seven degrees. Here we must state that it will also be most judicious that the organs more directly concerned in the function of digestion, should receive some preparatory attention by the use of some gentle saline aperient; and, perhaps, a more mild, and, in its operation, a more pleasant medicine, can scarcely be recommended than the following:—

Sulphate of Magnesia,

Sulphate of Soda, of each 2 drachms.

Carbonate of Magnesia, 1 drachm.

These dissolved in half a pint of water, of the warmth of fresh milk, and taken one hour

before breakfast, will produce healthy evacuations. We may justly observe that the efficacy of the above dose is much increased by exercise, and still more promoted if a cup of hot tea is used. When these precautions are attended to, a person in the ordinary enjoyment of health may continue the use of Sea-bathing, not only during the summer and autumn months, but also till Christmas, not only without suffering any injurious effects, but with the greatest advantage and gratification.

CHAPTER III.

THE BENEFICIAL EFFECTS OF BATHING.

VARIABILITY IN TEMPERATURE OF THE CLIMATE OF THE BRITISH ISLES—PULMONARY CONSUMPTION A NATIVE OF BRITAIN—HOT AND COLD BATHING A CURE FOR COLDS, ETC.—SCROFULA, ITS NATURE EXPLAINED—MORE A DISPOSITION TO THAN A REAL DISEASE—IT IS HEREDITARY—THE LATE MR. CARMICHAEL'S OPINION—HOT AND COLD SEA-BATHING, AND RESIDENCE ON THE SEA-SHORE, BOTH A PREVENTATIVE AND CURE—DIRECTIONS HOW TO BATHE—DR. PRIESSNITZ'S MODE OF CURING DISEASE BY SWEATING AND BATHING—HOT BATHS NOT DANGEROUS—PERSONS BENEFITTED BY BATHING—RHEUMATISM RELIEVED BY HOT AND COLD BATHING—ASTHMA RELIEVED BY RESIDENCE AT THE SEA-SHORE—PULMONARY CONSUMPTION, TEpid OR WARM BATHS IN—SIR J. CLARKE.—WEAKNESS OF THE SPINE RELIEVED BY BATHING—THE SUPERIORITY OF THE VAPOUR BATH GENERALLY CONSIDERED—IT PROTECTS THE SYSTEM FROM COLD—ITS USE IN DISEASES.—THE SHOWER BATH, ETC.

In consequence of the extreme changes of temperature and atmospheric vicissitudes, to

which, from our insular position, we are constantly subjected, we are liable to catarrhal affections, or in other words, have a great disposition to take cold. This is so exceedingly common, that it may be justly said to be continually laying the foundation of future disease, terminating in most fatal results. Living, as we do, under a climate so changeable in its temperature, where the oppressive heat, even in summer, in one day, is not unfrequently followed with the chilly humid breezes of the next, producing impressions on the human system, for which it was wholly unprepared; we cannot but, therefore, allow the truth of the character generally applied to our climate, by writers on the diseases peculiar to the British Isles, that it is the nursery of pulmonary complaints; and a reference to the annual statistics, would prove the epidemic character of such maladies. The skin we consider as the first organ acted on by atmospheric vicissitudes, and we can consequently perceive how necessary it is that its healthy functions should be constantly attended to, and the judicious use of Sea-bathing would seem to be the best adapted

means we have of warding off our extreme susceptibility to take cold. A lady of my acquaintance, who was constantly a torment to herself, as well as to others, from being subject to "colds," and a general derangement of the digestive functions, notwithstanding the *infallible* specifics of Holloway, Morrison, &c., was at last induced to give a few trials to hot, and afterwards cold, Sea-bathing; and, in a short time, was freed from her maladies, and ultimately cured! In fact it was clearly evident that the cause of the whole derangement arose from the skin's want of healthy action, hence the cutaneous circulation was irregularly performed, and the whole nervous system suffered in consequence. Likewise there can be no doubt but that diseases of the Liver, Dyspepsia, and other internal derangements, might be greatly relieved, if not ultimately cured by the proper use of hot, or cold Sea-bathing, applicable to each individual case.

The advantages derived from a lengthened course of Sea-bathing are, in a great number and variety of cases, beyond description. Diseases, of the most obstinate and protracted

character, frequently yielding to its influence, when all other remedies have failed. Of these an immense number of cases present themselves under features the most various and anomalous, under the head of Scrofula, and have been very remarkably relieved by the use of Sea-bathing and residence on the sea-shore. Scrofula cannot be considered as a distinct form of disease, but may be viewed as a constitutional debility, predisposing to disease, and hereditary in its nature. Were we to review the pages of medical literature, on this one subject, we should be almost inclined to believe it the base of nearly all the miseries to which human nature is heir. The late much lamented Mr. Carmichael, of Dublin, in his celebrated work on scrofula, has, however, clearly proved this disease to have its origin often in want of attention to cleanliness, and other sanitary matters. View it as we may however, one thing is beyond all doubt, that whatever directly or remotely tends to impart tone and vigour to the system, must, of necessity, have very beneficial results over this singularly obstinate affection. But Sea-bathing, of itself, cannot be efficacious in these cases, unless

due attention be paid to well-regulated diet, and to a fitting, but not too large, a proportion of daily exercise. The best course to pursue will be found as follows,—subject to such modifications as each individual case may require. After having, by mild aperients, unloaded the digestive organs, as we have before stated, the tepid sea-water bath should be regularly used, three or four times weekly, say for a week or two, commencing at a temperature of 98° , and lowering it by four degrees each successive bath, till brought down to 75° , at which it may be continued during any specified time. A person may continue in any of these baths from twenty minutes to half-an-hour, and the proper time for their use is two or three hours before dinner. On quitting the bath, it is almost needless to say that the surface of the body should be immediately and actively rubbed with a coarse towel, and, after dressing, moderate exercise should be used, not however so far as to produce lassitude and weariness. Having thus prepared the system for a course of cold bathing, it can, in almost every case, be immediately commenced, and continued every alternate day, even until the

approach of winter, with very decided advantage. But here I consider it necessary again to offer, to the invalid, a few more practical directions, regarding the immersion of the body in the cold bath, for while the healthy and robust can boldly plunge, head foremost, into the waves, the delicate and languid will not always bear so rude a shock, and these may with much propriety, and greater benefit, walk gradually down into the water. The notion that generally prevails, that determination of blood to the head is produced by such a course, is a mere fallacy, and not founded on natural premises. Another matter, of still greater importance, is also worthy of notice, that active exercise of the body, where the strength will permit, ought to be enjoined just before entering the bath, in order that the system may be in a moderate state of heated excitement. According to ordinary notions, this practice would seem of the most dangerous character, but in reality it is not so, and, if there remained any doubt on this subject, the writings of Dr. Priessnitz of Germany, and his great experience in treating diseases, by

hot and cold baths, would immediately dispel it. His mode of treatment, is as follows:—The patient is first stripped naked and wrapped up rather tightly in blankets, and laid down till sweating comes on, which seldom happens in less than an hour. As soon as this commences, the window is thrown open, and he is made to drink a glassful of cold water, every quarter or half-hour. This latter increases the perspiration so much that the sweat sometimes drops from the blanket, to the extent Dr. P. asserts of seven pounds weight! When the sweating has continued sufficiently long he is unswathed, and, covering himself with a cloak, hurries to the cold bath, into which he plunges, bathed in perspiration. While in the bath, he is made to exercise his limbs as much as possible, in order to excite the necessary cutaneous reaction. The greater the reaction, the more favourable will be the result.* And the same writer further remarks, in reference to exercise before bathing, that, provided the breathing is not hurried, and the surface is not chilled by exposure to the air, before plunging into the cold bath, no

* Medico-Chirurgical Review, No. 66.

risk whatever is incurred, however copious the perspiration. These remarks are of great importance, and worthy of strict attention, by all persons practising Sea-bathing. How different is the custom in vogue. Most persons consider that it is necessary, if exercise has been taken, so as to produce a flow of perspirable fluid on the surface, to linger for some time on the shore, in a state of nudity, with a view of becoming quite cool, ere they enter the bath. Such a mode of procedure is unwise and not unattended with danger; thus, if they plunge into the water in a chilly state, a sudden and alarming chillness may be expected to ensue, which would otherwise have been avoided. For the delicate, exercise before bathing according to their strength is, however, only advisable, as fatigue would tend to diminish the powers of the system. On coming from the bath, a walk is desirable, but not so far as to induce lassitude and debility; and, on arriving at home, taking a glass of sherry and a dry biscuit will, in many cases, be found to quicken the circulation, and produce a healthy glow. In prosecuting our enquiry into the numerous

class of diseases benefitted by Sea-bathing, it may not be out of place to remark that, when children are recommended its use, much care and attention are often necessary in its employment. Children of a scrofulous habit are, with much propriety and advantage, sent to the sea-coast, in order that their delicate constitutions may be strengthened by a course of Sea-bathing, and the highest medical authorities all agree on the beneficial results that frequently follow, even a residence on the sea-shore, where the atmosphere is found to possess salutary and very important qualities of marine influence, calculated to yield healthful impressions to the debilitated systems of those labouring under this much dreaded malady. It is not unfrequent to find children having a morbid terror of immersing their bodies in the sea, and their parents or attendants, finding expostulation and coaxing unavailing, will often descend to threatening, and finally forcing them to enter the flowing wave, and thus excite a nervous terror, amounting almost to distraction. Indeed I have seen parents thus unmercifully plunge their little offspring again

and again under the water, until almost a fit of asphyxia was produced, from the depressing influence of terror, as well as from obstructed respiration. Beneficial results cannot ensue from so harsh a procedure, and parents ought to be exceedingly cautious, as such a rude and unkind practice is attended with much danger. Where there exist such strong feelings of dislike against the use of cold bathing, it may be gradually overcome by daily sponging the body of the child, with the salt water, in the nursery or bedroom.

The vessels of the skin sympathize greatly with the slightest aberration in the functions of healthy digestion—in illustration of this, it is only necessary to contemplate the unseemly pimpled countenance of the sensualist, who has more frequently obeyed the dictates of Bacchus, than knelt at the shrine of temperance and propriety. In such cases the use of warm or cold Sea-bathing, the relinquishing of his baneful practices, with a well-regulated diet, and attention to exercise, will not only restore health, and invigorate the disordered digestive apparatus, but also remove the cutaneous disease.

Unfortunately the debauchee alone is not the only sufferer from gastric irritation, but the profound scholar, who pores over his midnight oil, the wily statesman, the studious metaphysician, the insatiable lover of classic lore, the indefatigable merchant, and the unwearied follower of fashionable gaieties, writhe under the torments of its ravages. Where there is considerable biliary disturbance it is advisable that, before having recourse to either hot or cold Sea-bathing, some few doses of aperient alterative medicine be used, and a pill, composed of four grains of blue pill and one grain of calomel, should be taken at bed time, for two or three successive nights, and followed each morning with a saline draught, as before ordered in the second chapter. A course of hot and cold Sea-bathing in chronic rheumatism is also found often highly advantageous. In fact there is no diseased condition of the body so subject to the control of the power of the skin's action as the disordered state of the serous membranes. The only matter of surprise is that so little general attention has been paid to the use of baths in these singular affections.

In the various forms of asthma, these baths are of marked utility, and residence on the sea-shore is, beyond all doubt, the best suited for the miserable sufferers under this disease. A person who was a martyr to this malady, with whom we were acquainted, often stated to us the relief she experienced from residing on the sea-side, and the use of the hot sea-water baths, but when she returned to the interior of the country for a few days, the paroxysms also returned, and her sleepless nights again ensued. Those who labour under threatening symptoms of pulmonary consumption, will be greatly relieved by pursuing the same means. Indeed to the latter it holds out decided hopes of advantage, more especially if they have previously been inhabitants of a densely crowded city, and subjected to all the ills resulting from impure air, and want of active exercise. How many valuable lives might be spared, if, instead of persevering and relying solely on internal medical treatment, equal attention was paid to air, exercise, and the healthy condition of the skin's action. In the valuable works of Sir James Clarke, on consumption and climate, many cases

are illustrated by this physician of the beneficial results from the use of warm baths, and an occasional residence on the sea-side. For habitual use, the tepid or hot bath is certainly the safest, and most valuable, especially during the autumn, winter, and spring. Even those who are in the advanced stages of consumption will often be much benefitted by the tepid bath, their hectic symptoms will be relieved, and the poor sufferer will enjoy afterwards the comforts of a sound repose, and thus the avenues of death will be soothed. But in recommending the use of occasional hot or tepid baths, to invalids labouring under this malady, we must here state that the use of either, in many instances, is not unattended with hazard, and ought to be used under medical advice and direction. There is also another class of disordered constitutions to which I might here refer, as being greatly ameliorated, by the use of Sea-bathing, namely, cases of exhaustion, brought on by imprudence, either in very early or adult life, and affecting the spine. They are generally accompanied by much langour and restlessness, without heat, and a sense of great debility extending along

the whole spinal column. Such cases as these are greatly relieved by first using a few tepid baths, and afterwards, as soon as the strength will permit, plunging into the sea. The only thing to be attended to in these cases is to discriminate accurately at first whether they arise from mere debility, or are connected with an affection of the spinal marrow, or the sheaths covering it, or in fine any of the branches of nerves coming from it, for, in these latter cases, we have generally absolute or sub-acute inflammation, which would require more prompt and judicious medical treatment.

It occasionally happens that, in consequence of some peculiar state of the constitution, the skin is rendered very liable to erysipelateous and scaly eruptions, in which the moisture of either the hot or cold bath is at first felt prejudicial and unpleasant, in such the use of the vapour bath will, in a short time, tend to relieve this irritability. The Vapour Bath is of itself indeed of vast importance, both as a preservative of health as well as a remedial agent, and it commends itself to our attention in many cases, as of the greatest utility. Many,

indeed, prefer its use to that of the warm bath, and its employment is now daily becoming more in vogue in these Islands. In the Bath Houses which we lately visited at Brighton and Worthing, we observed they were fitted up on very improved and convenient principles. The Vapour Bath has immediate and decided effects on the surface of the human body in the way of relieving colds and rheumatic attacks, arising from checked perspirations, and incautious exposure to the weather. In chronic affections, not only of the skin, but of the internal organs with which it immediately sympathizes, a judicious use of the Vapour Bath from Sea-water is productive of the most decided benefits, and is superior indeed to the ordinary Hot Baths in common use. Continental physicians are extremely partial to its employment in affections of the mucous membrane, which resemble consumption in so many of their symptoms; and it is also used extensively in chronic forms of this malady. As a means of removing from the surface all irritable matter secreted by the skin, equalizing the circulatory fluids, and determining to the surface, it relieves internal derangement,

congestion, and suppressed cutaneous secretion ; and the experience of Dr. Priessnitz, is sufficient to dispel all doubts that might exist, as regards any danger to the patients after using it, from ordinary exposure in the open air. In further proof of this, a gentleman lately stated to us that, during his travels through the northern parts of Europe, he frequently had recourse to the use of Vapour Baths, in order to enable him the better to resist the cold when daily travelling over mountains of snow. Indeed we are of opinion that it is one of the best remedies we have in our power in either acute or chronic rheumatism, and still more in arthritic or gouty attacks, in which bathing in other forms might be hazardous ; and, finally, we will state that many an attack of influenza, nay, even fever, might be nipped in its bud by the timely use of the Vapour Bath, from water of the ocean.

Having already referred to the use of the Shower Bath, a few remarks further on its general utility might not be misplaced. This form of bath has, in some cases, most decided advantages, both as a prophylactic and thera-

peutic agent, as well as a means of gratification and enjoyment.

From its convenience it may form part of the furniture of a bed room or dressing room, or that of any other apartment, and thus can be in readiness at all seasons of the year. Although the shock experienced in the use of the Cold Shower Bath be considerable at first, yet many delicate persons will bear it safely who are unable to sustain those consequent on immersion. This probably may arise from the abstraction of heat being less, and partly from its momentary application.

Persons of the most delicate systems, who are unable to withstand the slightest breeze, when accustomed to the use of the Shower Bath, will often persevere in its use during the entire winter, with the most marked and decided benefit.

In the susceptibility to catarrhal affections before alluded to, a course of shower baths will be most serviceable. The predisposition so common will generally be destroyed by its timely and judicious use.

In nervous habits the utility of the Shower

Bath is beyond dispute. Indeed, in many such cases, its use far surpasses all other medical treatment.

In mental diseases it is invaluable. The most severe fits of mania will often be warded off, by a continuous stream of cold water applied for some time to the head.

In asthmatic and rheumatic affections, during the absence of positive attack, the Shower Bath will generally be found most useful. In using the Shower Bath, it is necessary at first to commence with the water somewhat about 75°, gradually reducing the temperature. Persons residing at some distance from the sea-shore, and who cannot conveniently obtain sea-water, may form a kind of substitute, by adding to common water a handful or two of Bay Salt.

Many substitutes for sea-water have been suggested by chymical authorities, but we are of opinion that all our attempts even to imitate this natural fluid, in all its qualities, would be fruitless. How the sea receives its saltness, and other peculiar qualities, is still matter of much dispute among naturalists. Bakewell, a writer of some note, thus very undecidedly

expresses his opinion :—" It has been a matter of astonishment to many, and the enquiry has often been made, whence did the sea derive its saline contents? It has been supposed by some writers that the salt in the sea has been gradually augmented by saline particles, brought into it by rivers; but this cause is totally inadequate to explain the immense quantity of salt existing in the mass of the ocean." If the average depth of the sea, says the same writer, be five miles, and it contain two and a half per cent. of salt, were the water entirely evaporated, the saline residue would form a stratum of salt more than five hundred feet in thickness, covering three fifths of the surface of the globe.

CHAPTER IV.

CASES IN WHICH BATHING MAY BE INJURIOUS.

DR. J. FORBES' OPINION OF THE GENERAL ERRORS IN SEA-BATHING—CONVALESCENT PATIENTS ARE OFTEN WRONGLY DIRECTED TO BATHE—A GENERAL ADVICE IN RECOMMENDING COLD BATHING—THE SYMPTOMS PRODUCED WHEN BATHING DISAGREES—IN ORGANIC DISEASES—WHEN BILE IS IN THE STOMACH—TO FEMALES AT THEIR PERIODS—DURING PREGNANCY—IN PLETHORIC HABITS AND HEAD AFFECTIONS, THE COLD BATH IS HAZARDOUS—SIMPLE PALPITATION OF THE HEART IS OFTEN RELIEVED BY BATHING—IN ALL CUTANEOUS DISEASES BATHING MOST FREQUENTLY DISAGREES, ETC.

IN this concluding chapter, we will point out the general abuse of Sea-bathing, and the cases in which it is inadmissible, or likely to prove injurious. It has been observed, by Dr. J. Forbes, a well-known medical writer of the present day, and to whom the medical profession is greatly indebted, that, "It will not be

doubted by any physician resident in the vicinity of the sea, that in the use of no other remedy are greater mistakes committed, and greater mischief produced, than in the use of the cold bath." This scientific author might not have confined his observation to the cold bath alone, for very serious results not unfrequently follow an injudicious use of the hot bath also. In illustration of the abuse of Sea-bathing, we have only to contemplate how numerous are the cases in which convalescent patients are sent to the sea-shore, with a general and indiscriminating direction to bathe, and how frequently does an implicit obedience of such direction retard recovery, and disperse as it were the rudiments of returning strength. Two very important considerations are worthy of notice, and ought to guide us in recommending, or employing Sea-bathing in general. When a person plunges into the briny wave, the first effect produced or experienced, is a powerful shock conveyed to the whole nervous system, it for a time, enervates and enfeebles the whole, but a consequent reaction from this depression ensues, and when the body is with-

drawn from immersion, a glow of heat should follow, producing renewed vigour and energy. Here the question naturally presents itself, in recommending the cold bath—Is the power of the patient's system able to withstand the shock of immersion, so as to perform the power of natural reaction? When Sea-bathing is injurious, some of the following effects are generally produced; a degree of chillness, amounting sometimes to shivering, continuing for sometime—a wrinkled appearance of the skin, or a raised state of its papillæ, commonly known by the term goose-skin—a feeling of heaviness with a diminution of tone and vigour of the whole body—a sense of oppression in the chest, accompanied with a frequent desire to make a deep inspiration or to sigh, headache, want of appetite, sometimes nausea, depression of spirits, singing or noise in the ears, and a general weariness and lassitude. These are among the most constant symptoms indicating the impropriety of persevering in the use of Sea-bathing, and are directly in opposition to those produced on the system when it is beneficially employed. These effects cannot be mistaken, and a due ob-

servance of them will always guide us whether to continue or withhold its use. If organic disease of any kind be present, if there be symptoms of either inflammation or congestion of the important internal viscera it ought not to be used, either in its hot or cold state, unless under proper medical advice. When the stomach is disordered by bile, it also generally disagrees, in any form. Females also ought to abstain from bathing at their stated periods, otherwise the most dangerous consequences may ensue, and during the stages of pregnancy it is generally inadmissible, but there are some who practise its use with impunity. In persons in whom there is great fulness of habit, with a determination of blood to the head, and a predisposition to apoplectic attacks, bathing, either hot or cold, ought not, generally speaking, to be used, or if at all with the greatest precaution, indeed in such cases, bathing ought not to be practised without medical direction. In head affections, however, the greatest benefit will often be experienced, by the use of the cold shower bath; and it is one of the best means of warding off attacks of this kind, provided due

attention is paid to the state of the general system, by the use of internal medicines. In organic affections of the heart bathing is attended with much hazard, and many instances there are in which it has proved instantly fatal. Mere palpitation, however, must not be confounded with real organic change of structure; disordered digestive functions, and other common derangements of the system, may sympathetically produce increased power of the heart's action, and here a judicious use of hot and cold bathing may, by relieving the cause, cure the effect. Again, debility and increased nervous sensibility or irritability may be the only existing causes of palpitation, bathing in such cases will undoubtedly prove serviceable by communicating tone and vigour to the general system. But in some cases, from the existence of other symptoms, immersion is often rendered impracticable, and in these sponging the chest freely with cold salt water, recently taken from the sea, will frequently produce decided advantages. There are some indeed, who from a singular delicate state of the cutaneous surface, are prevented the use of bathing, and to these the above

suggestion will prove useful, and no doubt in a short time will accustom the system to enjoy bathing even in the open sea.

In no class of diseases are there greater mistakes and errors committed in the way of bathing, than in cutaneous diseases, or those affecting the skin. They are numerous and of a great variety, not necessary to particularize here—and their repression is frequently attended with the most distressing and urgent symptoms. It is evident, to all acquainted with the physiology of the human skin, that nature often to rid herself from internal derangement, throws out a cutaneous eruption; and while this process remains unobstructed the internal viscera are able to perform, in due order, their functions unimpeded; but to prevent this effort of nature, by incautiously applying to the surface of the body anything that will tend to obstruct it, alarming, and perhaps fatal effects may result. It will, therefore, be incumbent on all persons suffering from, or subject to, eruptive diseases, not to have recourse to Sea-bathing, in any way, unless under medical direction, and a previous preparation of the system by internal treatment.

There are also other circumstances, and types of diseases, in which Sea-bathing, more especially in its cold state, would be altogether inadmissible, but which cannot be specified within the limits of a confined treatise.

From what has been already advanced, it will be apparent that, while Sea-water is important both as a means of hygiene, as well as a therapeutic agent, we must, at the same time, bear in mind that, like all other remedies, its beneficial effects greatly depend on its judicious use. And, when *active* disease be present in the system, it ought not to be had recourse to, unless under judicious medical advice.

